

NEW RECORDS AND DESCRIPTIONS OF *ALLOPERLA* (PLECOPTRA: CHLOROPERLIDAE) FROM THE OZARK-OUACHITA REGION¹

Bill P. Stark², Kenneth W. Stewart³, Jack Feminella³

ABSTRACT: The male of *Alloperla ouachita* n. sp., from Arkansas is described and compared with other members of the *A. leonarda* Ricker group. Additional records of *A. caudata* Frison, *A. hamata* Surdick and *A. leonarda* from the Ozark-Ouachita region are given and a key to male *Alloperla* known from this area is presented.

Since the Frison (1934, 1942) descriptions of *Alloperla caudata* from the Ozarks, no additional *Alloperla* species have been recorded in studies of stoneflies of this region (Stark & Stewart 1973; Stewart et al. 1974). Recent field work on the Little Missouri River in Arkansas revealed one species new to science and the first record of *A. hamata* Surdick from west of the Mississippi River. *A. hamata* and an additional species, *A. leonarda* Ricker, were subsequently found among material from Missouri in the Monte L. Bean Museum.

In order to facilitate regional studies, the new species is described herein, and a key to male *Alloperla* known to occur in the area is presented. Specimens utilized in this study have been deposited in the Monte L. Bean Museum, Brigham Young University (BYU), North Texas State University Museum (NTSU), Bill P. Stark Collection (BPS), and the United States National Museum (USNM).

Alloperla hamata Surdick

Surdick (1981) described this species from Alabama, but illustrations of the male genitalia are given here in facilitate comparison with other regional species. Our specimens differ slightly from Alabama specimens described by Surdick (1981) in fine detail of the epiproct tip. In Ozark-Ouachita populations the widest part of the serrate apex occurs proximal to the base, while in Alabama specimens the widest part of the serrated region occurs anterior to the basal tooth (Figs. 1, 2). These populations are, however, not presently considered to be specifically distinct.

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²Dept of Biology, Mississippi College, Clinton, MS 39058

³Dept. of Biological Sciences, North Texas State Univ., Denton, TX 76203

Material examined — ARKANSAS: *Montgomery Co.*, Little Missouri Riv. 20-VI-80, E.J. Bacon and J.W. Feminella, 1♂ (BPS). MISSOURI: *Christian Co.*, Bull Crk., 10-V-72, B.K. Newman, 29♂ (BYU).

Alloperla ouachita Stark & Stewart, n. sp.

(Figs. 3, 4)

Male. — Forewing length 6-7 mm; body length 5-7 mm. General color white in alcohol; abdominal stripe absent. Epiproct tip ca. 2X long as wide; lateral margins convergent near base, gradually diverging to apical third then slightly convergent to horns. Anterior margin bluntly upturned, rounded with a pair of prominent lateral horns; dorsal aspect with a broad mesal carina, widest at apex; fine setae along lateral margins. Cowl with prominent membranous lateral lobes. Lateral brushes on segments 7-9.

Types. — Holotype ♂ (ISNM #100682) and 16 ♂ paratypes (BPS and NTSU) from Arkansas, Montgomery Co., Little Missouri Riv., 20-VI-80, E.J. Bacon and J.W. Feminella.

Etymology. — The specific name, *A. ouachita*, is based on the mountain range in which it is collected.

Diagnosis. — *A. ouachita* is a member of the *A. leonarda* complex which also includes *A. furcula* Surdick and *A. natchez* Surdick & Stark. It is most closely related to *A. leonarda* and speciation probably is the result of isolation in the Ouachita Mountains of ancestral populations of *A. leonarda*. The two species are distinguished by characters given in the key below.

Alloperla cuadata Frison

Frison (1942) and Hitchcock (1974) have adequately characterized this species, but illustrations of the male genitalia (Figs. 5, 6) are given to facilitate comparison with other Ozark-Ouachita species. The records below include the first Missouri localities for the species.

Material examined. — MISSOURI: *Christian Co.*, Bull Crk, Hwy W, S of Ozark, 10-V-72, B.K. Newman, 13 ♂ (BYU); same location, 17-V-72, B.K. Newman, 17 ♂ (BYU). *Greene Co.*, Little Sac Riv, abv. Fellows Lake, 16-V-72, R.W. Baumann, 2 ♂ (BYU); same location, 25-V-72, R.W. Baumann, 4 ♂ (BYU). *Taney Co.*, Blue Crk, nr. Swan, 23-V-72, R.W. Baumann, 2 ♂ (BYU); Bull Crk, Hwy. 176, 12-17-V-72, B.K. Newman, 22 ♂ (BYU). OKLAHOMA: *Delaware Co.*, Flint Crk, Flint, 6-VI-73, B. Stark, 2 ♂, 2 ♀ (BPS).

Alloperla leonarda Ricker

Harper & Kirchner (1978) and Ricker (1952) have adequately diagnosed this species, but illustrations of male genitalia (Figs. 7, 8) are given to facilitate comparisons with other regional species. The record below represents the first Missouri locality for the species.

Material examined. — MISSOURI: *Christian Co.*, Bull Crk, Hwy W, S of Ozark, 10-V-72, B.K. Newman, 13 ♂ (BYU).

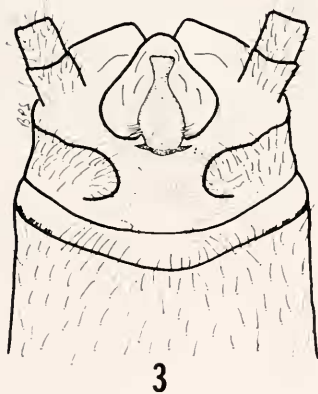
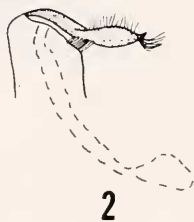
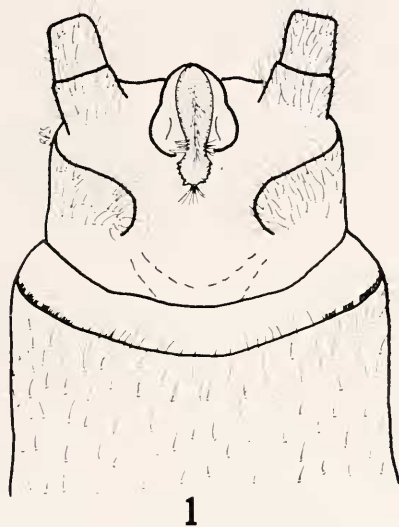


Fig. 1-4. *Alloperla terminalia*. Fig. 1. *A. hamata* male, dorsal. Fig. 2. *A. hamata* epiproct, lateral. Fig. 3. *A. ouachita*, male, dorsal. Fig. 4. *A. ouachita*, epiproct, lateral.

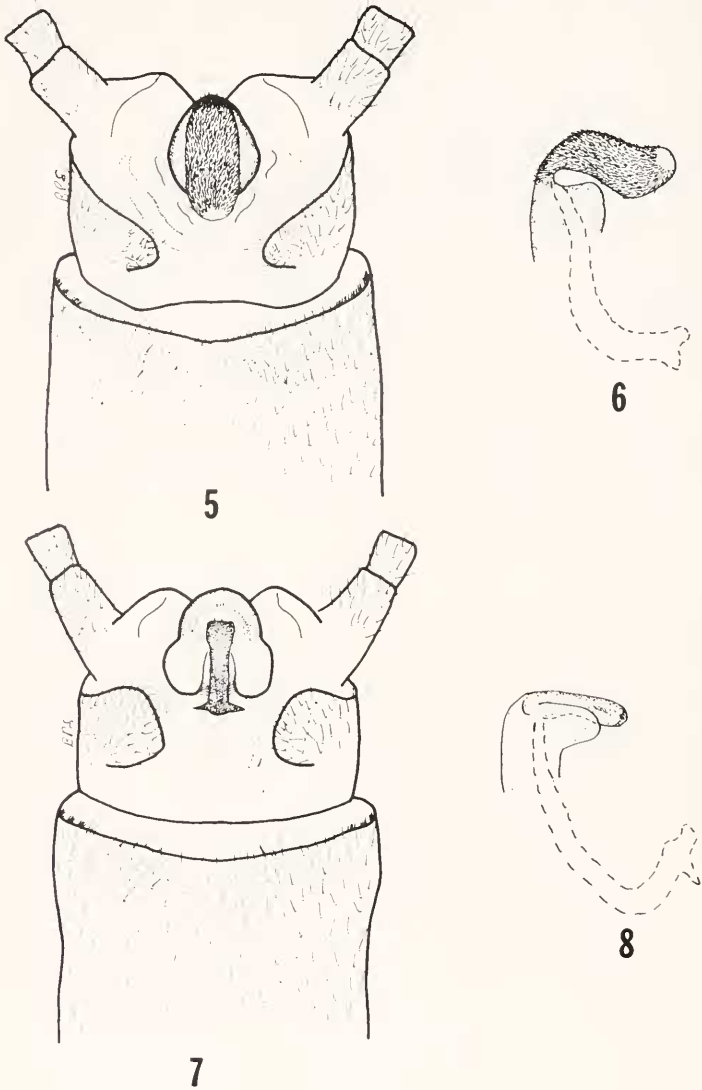


Fig. 5-8. *Alloperla terminalia*. *A. caudata*, male, dorsal. Fig. 5. *A. caudata*, male, dorsal. Fig. 6. *A. caudata*, epiproct, lateral. Fig. 7. *A. leonarda*, male, dorsal. Fig. 8. *A. leonarda*, epiproct, lateral.

KEY TO OZARK-OUACHITA MALE *ALLOPERA*

1. Epiproct cowl with enlarged membranous lateral lobes (Fig. 4) 2
 Epiproct cowl without enlarged membranous lateral lobes (Fig. 2) 3
2. Lateral margins of epiproct almost parallel (Fig. 7); lateral aspect of epiproct of almost uniform thickness (Fig. 8) *leonarda*
 Lateral margins of epiproct sinuate; Epiproct narrow at base, widest at apical third (Fig. 3); lateral aspect of epiproct distinctly inflated in apical half (Fig. 4) *ouachita*
3. Epiproct apex with lateral serrations (Fig. 1); dorsal aspect with scattered fine long setae *hamata*
 Epiproct apex without lateral serrations (Fig. 5); dorsal aspect densely covered with short golden brown setae *caudata*

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